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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,467	11/08/2001	Fang-Hvi Chan	B-4373 619285-5	4294

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EXAMINER	
JORGENSEN, LELAND R	
ART UNIT	PAPER NUMBER
2675	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/045,467	CHAN ET AL.	
	Examiner	Art Unit	
	Leland R. Jorgensen	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 6 and 8 - 10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 6 and 8 - 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6, and 8 - 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Jackson et al., USPN 5,572,344.

Claim 1

Jackson teaches a liquid crystal display device comprising a first substrate [optically transparent substrate 12] and a second substrate [optically transparent passivating layer 28] facing the first substrate. A space for housing liquid crystal molecules [liquid crystal material 24] is formed between the first substrate and the second substrate. Jackson, col. 3, lines 39 – 67; and figures 1 & 2. A plurality of electrodes [16 – 22] are paired and disposed on the first substrate. Jackson, col. 3, lines 52 – 57. Jackson, in figure 2 shows electrodes 18 and 22 paired and being in parallel with each other and electrodes 16 and 20 being paired and in parallel to each other. If the phrase "all the electrodes being parallel with each other" interpreted as all electrodes are parallel with another electrode, then figure 3 anticipates this arrangement. If the phrase means that all electrodes are parallel with all other electrodes on the first substrate, such arrangement is anticipated when Jackson states, "While the simplest pixel element would have only one set (two) of electrodes,..." Jackson, col. 3, lines 53 – 54. As shown in figure 2, each

pair of electrodes comprises a first electrode (e.g. 18) with a first end and two symmetric first lateral sides connecting with the first end, formed on the first substrate and a second electrode (e.g. 22) with a second end and two symmetric second lateral sides connecting with the second end, formed on the first substrate. The first end faces the second end with a discharge gap there between. A plurality of liquid crystal molecules is formed in the space in a predetermined arrangement. Wherein when an external voltage is applied between the first and the second electrodes, an electrical field is generated to change the arrangement of the liquid crystal molecules. Jackson, col. 4, lines 1 – 19.

Claim 6

It is inherent, as shown in Jackson, figure 2, a line formed between the first end and the second end, and the first electrode is symmetrical to the second electrode by the line.

Claims 8 and 9

Jackson, figure 2 shows that the width (or thickness0 of the first electrode increases from the first end to the other end, and the width of the second electrode increases from the second end to the other end.

Claim 10

Jackson teaches a liquid crystal display device having a plurality of display cells [pixel element 10] comprising a first substrate [optically transparent substrate 12] and a second substrate [optically transparent passivating layer 28] facing the first substrate. A space for housing liquid crystal molecules [liquid crystal material 24] is formed between the first substrate and the second substrate. Four electrodes [18 though 22] are disposed on the first substrate and at corners of each display cell. Jackson, col. 3, lines 39 – 67; and figures 1 & 2. A plurality of

liquid crystal molecules formed in the space in a predetermined arrangement wherein when an external voltage is applied between the first and the second electrodes, an electrical field is generated to change the arrangement of the liquid crystal molecules. Jackson, col. 4, lines 1 – 19.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson et al, in view of Yoshida et al., USPN 6,642,984 B1.

Claim 2

Jackson teaches that spatially varying electric field causes induces the liquid crystal material to spatially vary the transmission of the incident light through the liquid crystal material. Jackson, col. 4, lines 1 – 19.

Jackson does not specifically teach the actual predetermined arrangement of the liquid crystal molecules.

Yoshida teaches that the predetermined arrangement of the liquid crystal molecules is in a vertical alignment, each liquid crystal molecule has a longitudinal axe, and the longitudinal axe is substantially perpendicular to the first substrate. Yoshida, col. 1, lines 32 – 35; col. 10, lines 62 – 65; and figure 5.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the predetermined arrangement of the liquid crystal molecules as taught by Yoshida with the liquid crystal device as taught by Jackson to produce "a liquid crystal apparatus in which the contrast is not reduced when it is viewed obliquely." Yoshida, col. 1, lines 15 – 17. Yoshida invites such combination by teaching,

> Thus, the liquid crystal molecules are aligned in the direction perpendicular to the substrate surface when no voltage is applied thereto, and are aligned in the direction parallel to the oblique electric field upon application of a voltage thereto. In this way, almost all the liquid crystal molecules are smoothly aligned along the electric field and, therefore, no disclination occurs.

Yoshida, col. 2, lines 15 – 19.

Claim 3

Yoshida teaches that the predetermined arrangement of the liquid crystal molecules is in a vertical alignment, each liquid crystal molecule has a longitudinal axe, the longitudinal axe is substantially perpendicular to the second substrate. Yoshida, col. 1, lines 32 – 35; col. 10, lines 62 – 65; and figure 5.

5. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson et al. in view of Hiroshi, USPN 5,995,186.

Claim 4

Jackson teaches that spatially varying electric field causes induces the liquid crystal material to spatially vary the transmission of the incident light through the liquid crystal material. Jackson, col. 4, lines 1 – 19.

Jackson does not specifically teach the actual predetermined arrangement of the liquid crystal molecules.

Hiroshi shows that the predetermined arrangement of the liquid crystal molecules is in a horizontal alignment, each liquid crystal molecule has a longitudinal axe, and the longitudinal axe is substantially parallel to the first substrate and perpendicular to a line formed by the first end and the second end. Hiroshi, col. 3, lines 9 – 20, 61 – 65; and figures 2a and 2c.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the predetermined arrangement of the liquid crystal molecules as taught by Hiroshi with the liquid crystal device as taught by Jackson to produce a "liquid crystal display having a wide viewing angle and improved picture quality." Hiroshi, col. 1, lines 63 – 64.

Claim 5

Hiroshi shows that the predetermined arrangement of the liquid crystal molecules is in a horizontal alignment, each liquid crystal molecules has a longitudinal axe, and the longitudinal axe is substantially parallel to the second substrate and perpendicular to a line formed between the first end and the second end. Hiroshi, col. 3, lines 9 – 20, 61 – 65; and figures 2a and 2c.

Response to Arguments

6. Applicant's arguments with respect to claims 1 – 6 and 8 - 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leland R. Jorgensen whose telephone number is 703-305-2650. The examiner can normally be reached on Monday through Friday, 7:00 a.m. through 3:30 p.m..

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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DENNIS-DOON CHOW
PRIMARY EXAMINER